

भारतीय मानक
द्रव चालित तरल शक्ति — चार छेद वाले दिशात्मक
नियंत्रक वाल्व — आरोपण सतहें
(दूसरा पुनरीक्षण)

Indian Standard
HYDRAULIC FLUID POWER —
FOUR-PORT DIRECTIONAL CONTROL VALVES —
MOUNTING SURFACES
(*Second Revision*)

ICS 23.100.30

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BUREAU OF INDIAN STANDARDS
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NATIONAL FOREWORD

This Indian Standard (Second Revision) which is identical with ISO 4401 : 2005 'Hydraulic fluid power — Four-port directional control valves — Mounting surfaces' issued by the International Organization for Standardization (ISO) was adopted by the Bureau of Indian Standards on the recommendation of the Fluid Power Systems Sectional Committee and approval of the Production and General Engineering Division Council.

This standard was originally published in 1982 based on ISO 4401 : 1980 and subsequently revised in 2000 based on ISO 4401 : 1994. This second revision has been harmonized with ISO 4401 : 2005 by adoption to make pace with the latest developments that have taken place at international level.

The text of ISO Standard has been approved as suitable for publication as an Indian Standard without deviations. Certain terminology and conventions are, however, not identical to those used in Indian Standards. Attention is particularly drawn to the following:

- a) Wherever the words 'International Standard' appear, referring to this standard, they should be read as 'Indian Standard'.
- b) Comma (,) has been used as a decimal marker while in Indian Standards the current practice is to use a point (.) as the decimal marker.

In this adopted standard, reference appears to certain International Standards for which Indian Standards also exist. The corresponding Indian Standards, which are to be substituted in their respective places, are listed below along with their degree of equivalence for the editions indicated:

<i>International Standard</i>	<i>Corresponding Indian Standard</i>	<i>Degree of Equivalence</i>
ISO 286-2 : 1988 ¹⁾ ISO system of limits and fits — Part 2: Tables of standard tolerances grades and limit deviations for holes and shafts	IS 919 (Part 2) : 1993 ISO system of limits and fits: Part 2 Tables of standard tolerances grades and limit deviations for holes and shafts (<i>first revision</i>)	Identical
ISO 4287 : 1997 Geometrical Product Specifications (GPS) — Surface texture: Profile method — Terms, definitions and surface texture parameters	IS 15262 : 2002 Geometrical product specifications (GPS) — Surface texture: Profile method — Terms, definitions and surface texture parameters	do
ISO 5598:1985 ²⁾ Fluid power systems and components — Vocabulary	IS 10416 : 1992 Fluid power systems and components — Vocabulary (<i>first revision</i>)	do

The technical committee has reviewed the provisions of the following International Standards referred in this adopted standard and has decided that they are acceptable for use in conjunction with this standard:

<i>International Standard</i>	<i>Title</i>
ISO 1101 : 2004	Geometrical Product Specifications (GPS) — Geometrical tolerancing — Tolerances of form, orientation, location and run-out
ISO 1302 : 2002	Geometrical Product Specifications (GPS) — Indication of surface texture in technical product documentation
ISO 5783 : 1995	Hydraulic fluid power — Code for identification of valve mounting surfaces and cartridge valve cavities

¹⁾ Since revised in 2010.

²⁾ Since revised in 2008.

Indian Standard

HYDRAULIC FLUID POWER —
FOUR-PORT DIRECTIONAL CONTROL VALVES —
MOUNTING SURFACES
(*Second Revision*)

1 Scope

This International Standard specifies the dimensions and other data relating to surfaces on which four-port hydraulic directional control valves are mounted in order to ensure their interchangeability.

It applies to mounting surfaces for four-port hydraulic directional control valves which represent current practice. They are generally applicable to industrial equipment.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 286-2, *ISO system of limits and fits — Part 2: Tables of standard tolerance grades and limit deviations for holes and shafts*

ISO 1101, *Geometrical Product Specifications (GPS) — Geometrical tolerancing — Tolerances of form, orientation, location and run-out*

ISO 1302, *Geometrical Product Specifications (GPS) — Indication of surface texture in technical product documentation*

ISO 4287, *Geometrical Product Specifications (GPS) — Surface texture: Profile method — Terms, definitions and surface texture parameters*.

ISO 5598, *Fluid power systems and components — Vocabulary*

ISO 5783, *Hydraulic fluid power — Code for identification of valve mounting surfaces and cartridge valve cavities*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 5598 apply.

4 Symbols

4.1 For the purposes of this International Standard, the following symbols apply:

- A, B, L, P, T, T₁, X and Y identify ports;
- F₁, F₂, F₃, F₄, F₅ and F₆ identify threaded holes for fixing cap screws (bolts) (see footnote a in the figures);
- G, G₁, G₂ identify locating pin holes.

4.2 An explanation for the codes is given in ISO 5783.

5 Tolerances

5.1 The following values shall be applied to the mounting surface, i.e. that area within dotted bold lines:

- surface roughness: $Ra \leq 0,8 \mu\text{m}$ as specified in ISO 1302 and ISO 4287;
- surface flatness: 0,01 mm over a distance of 100 mm, as specified in ISO 1101;
- tolerance for diameter of locating pin hole: H12 in accordance with ISO 286-2.

5.2 The following tolerances shall be complied with along the x - and y -axes with respect to the origin:

- pin holes and bolt holes: $\pm 0,1 \text{ mm}$;
- port holes: $\pm 0,2 \text{ mm}$.

As for the other dimensions, see the figures.

6 Dimensions

6.1 The mounting surface dimensions for hydraulic directional control valves with four service ports shall be selected from the figures and tables specified in 6.2 to 6.7.

6.2 Mounting surface dimensions for control valves with four service ports with 4,5 mm maximum port diameter (4401-02-01-0-05), are given in Figure 1 and Table 1.

6.3 Mounting surface dimensions for control valves with four service ports with 7,5 mm maximum port diameter:

- a) without pilot port (4401-03-02-0-05), are given in Figure 2 and Table 2;
- b) with pilot ports (4401-03-03-0-05), are given in Figure 3 and Table 3.

6.4 Mounting surface dimensions for control valves with four service ports with 11,2 mm maximum port diameter:

- a) without pilot port (4401-05-04-0-05), are given in Figure 4 and Table 4;
- b) with pilot ports (4401-05-05-0-05), are given in Figure 5 and Table 5;
- c) with drain port and without pilot ports (4401-05-06-0-05), are given in Figure 6 and Table 6.

6.5 Mounting surface dimensions for control valves with four service ports with pilot ports and with 17,5 mm maximum port diameter, with or without drain ports (4401-07-07-0-05), are given in Figure 7 and Table 7.

6.6 Mounting surface dimensions for control valves with four service ports with pilot ports and with 25 mm maximum port diameter, with or without drain ports (4401-08-08-0-05), are given in Figure 8 and Table 8.

6.7 Mounting surface dimensions for control valves with four service ports with pilot ports and with 32 mm maximum port diameter, with or without drain ports (4401-10-09-0-05), are given in Figure 9 and Table 9.

7 Pressure limitations

Operating pressure limitations for subplates and manifold blocks with these mounting surfaces shall be established by the manufacturer.

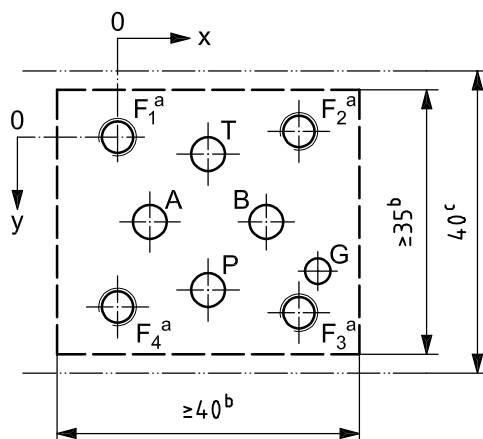
8 Identification statement (reference to this International Standard)

Use the following statement in test reports, catalogues and sales literature when electing to comply with this International Standard:

"Mounting surface dimensions conform to ISO 4401:2005, *Hydraulic fluid power — Four-port directional control valves — Mounting surfaces*"

Codification: 4401-02-01-0-05

Dimensions in millimetres



^a The minimum thread depth is 1,5 bolt diameters, D . The recommended full thread depth shall be $2D + 6$ mm to aid interchangeability of valves and to reduce the number of fixing bolt lengths. The recommended engagement of fixing cap screw (bolt) threads for ferrous mountings is $1,25D$.

^b The dimensions specifying the area within the dotted bold lines are the minimum dimensions for the mounting surface. The corners of the rectangle may be radiused to a maximum radius, $r_{\max}$, equal to the thread diameter of the fixing cap screws (bolts). Along each axis the fixing holes are at equal distances to the mounting surface edges.

^c This dimension gives the minimum space required for a valve with this mounting surface. The dimension is also the minimum distance from centreline to centreline of two identical mounting surfaces placed on a manifold block. The attention of valve manufacturers is drawn to the fact that no part of the width of the complete valve assembly is to exceed this dimension.

Figure 1 — Mounting surface for four-port hydraulic directional control valves with 4,5 mm maximum port diameter

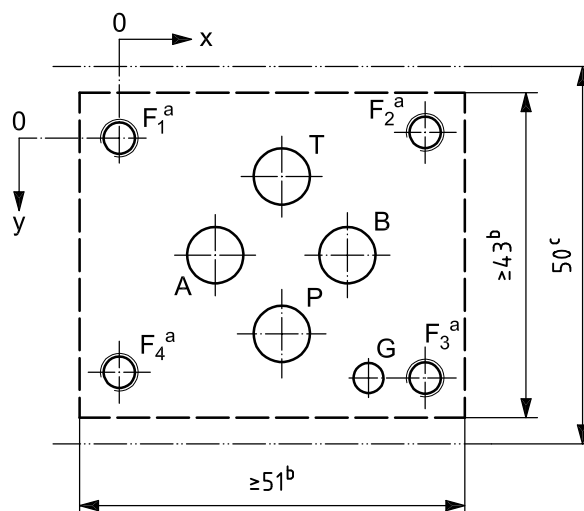
Table 1 — Mounting surface for four-port hydraulic directional control valves with 4,5 mm maximum port diameter

Dimensions in millimetres

Axis	P	A	T	B	F ₁	F ₂	F ₃	F ₄	G ^a
	Ø 4,5 max.	Ø 4,5 max.	Ø 4,5 max.	Ø 4,5 max.	M5	M5	M5	M5	Ø 3,4
x	12	4,3	12	19,7	0	24	24	0	26,5
y	20,25	11,25	2,25	11,25	0	- 0,75	23,25	22,5	17,75
NOTE Operating pressure limitations for subplates and manifold blocks with these mounting surfaces are specified by the manufacturer.									
^a Blind holes made in the mounting surfaces to accommodate the locating pins on the valves; their minimum depth is 4 mm.									

Codification: 4401-03-02-0-05

Dimensions in millimetres



^a The minimum thread depth is 1,5 cap screw (bolt) thread diameters, D . The recommended full thread depth shall be $2D + 6$ mm to aid interchangeability of valves and to reduce the number of fixing cap screw (bolt) lengths. The recommended engagement of fixing cap screw (bolt) threads for ferrous mountings is $1,25D$.

^b The dimensions specifying the area within the dotted bold lines are the minimum dimensions for the mounting surface. The corners of the rectangle may be radiused to a maximum radius, r_{max} , equal to the thread diameter of the fixing cap screws (bolts). Along each axis the fixing holes are at equal distances to the mounting surface edges.

^c This dimension gives the minimum space required for a valve with this mounting surface. The dimension is also the minimum distance from centreline to centreline of two identical mounting surfaces placed on a manifold block. The attention of valve manufacturers is drawn to the fact that no part of the width of the complete valve assembly is to exceed this dimension.

Figure 2 — Mounting surface for four-port hydraulic directional control valves with 7,5 mm maximum port diameter and without pilot port

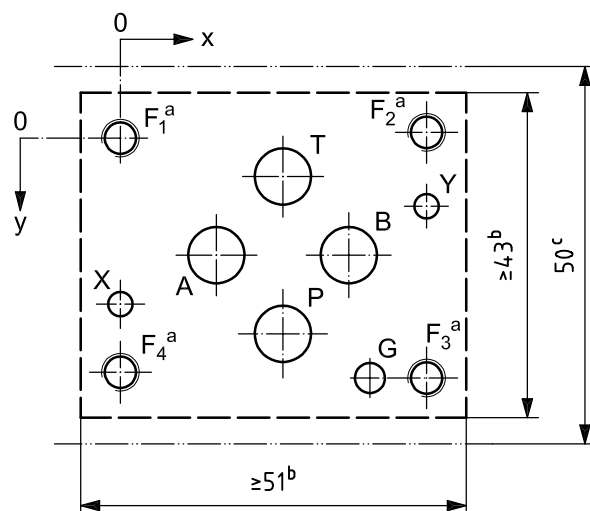
Table 2 — Mounting surface for four-port hydraulic directional control valves with 7,5 mm maximum port diameter and without pilot port

Dimensions in millimetres

Axis	P	A	T	B	F ₁	F ₂	F ₃	F ₄	G ^a
	Ø 7,5 max.	Ø 7,5 max.	Ø 7,5 max.	Ø 7,5 max.	M5	M5	M5	M5	Ø 4
x	21,5	12,7	21,5	30,2	0	40,5	40,5	0	33
y	25,9	15,5	5,1	15,5	0	- 0,75	31,75	31	31,75
NOTE 1 The use of this mounting surface will require caution relative to the port seals.									
NOTE 2 Operating pressure limitations for subplates and manifold blocks with these mounting surfaces are specified by the manufacturer.									
^a Blind holes made in the mounting surfaces to accommodate the locating pins on the valves; their minimum depth is 4 mm.									

Codification: 4401-03-03-0-05

Dimensions in millimetres



^a The minimum thread depth is 1,5 cap screw (bolt) thread diameters, D . The recommended full thread depth shall be $2D + 6$ mm to aid interchangeability of valves and to reduce the number of fixing cap screw (bolt) lengths. The recommended engagement of fixing cap screw (bolt) threads for ferrous mountings is $1,25D$.

^b The dimensions specifying the area within the dotted bold lines are the minimum dimensions for the mounting surface. The corners of the rectangle may be radiused to a maximum radius, r_{max} , equal to the thread diameter of the fixing cap screws (bolts). Along each axis the fixing holes are at equal distances to the mounting surface edges.

^c This dimension gives the minimum space required for a valve with this mounting surface. The dimension is also the minimum distance from centreline to centreline of two identical mounting surfaces placed on a manifold block. The attention of valve manufacturers is drawn to the fact that no part of the width of the complete valve assembly is to exceed this dimension.

Figure 3 — Mounting surface for four-port hydraulic directional control valves with 7,5 mm maximum port diameter and with pilot ports

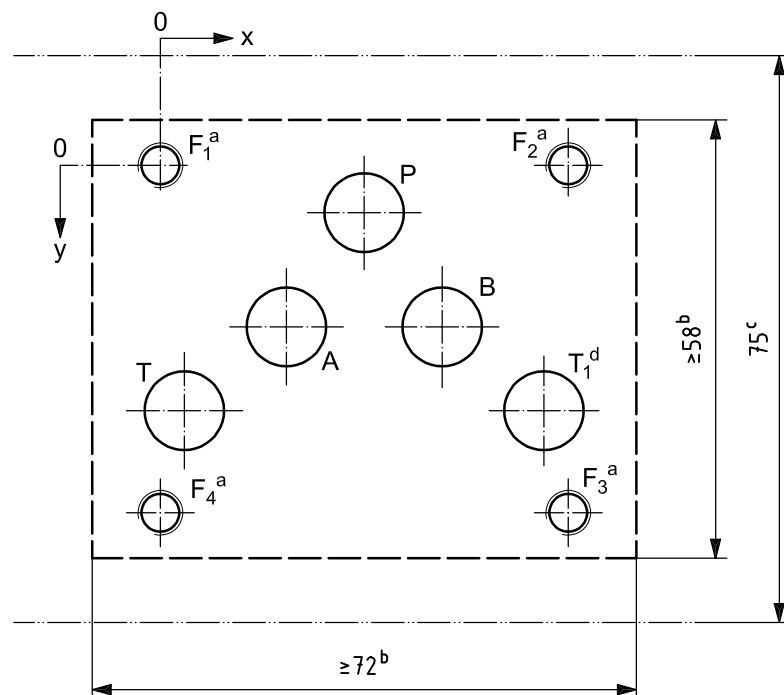
Table 3 — Mounting surface for four-port hydraulic directional control valves with 7,5 mm maximum port diameter and with pilot ports

Dimensions in millimetres

Axis	P	A	T	B	F ₁	F ₂	F ₃	F ₄	X	Y	G ^a
	Ø 7,5 max.	Ø 7,5 max.	Ø 7,5 max.	Ø 7,5 max.	M5	M5	M5	M5	Ø 3,3 max.	Ø 3,3 max.	Ø 4
x	21,5	12,7	21,5	30,2	0	40,5	40,5	0	0	40,5	33
y	25,9	15,5	5,1	15,5	0	- 0,75	31,75	31	22	9	31,75
NOTE 1 The use of this mounting surface will require caution relative to the port seals.											
NOTE 2 Operating pressure limitations and manifold blocks with these mounting surfaces are specified by the manufacturer.											
^a Blind holes made in the mounting surfaces to accommodate the locating pins on the valves; their minimum depth is 4 mm.											

Codification: 4401-05-04-0-05

Dimensions in millimetres



^a The minimum thread depth is 1,5 cap screw (bolt) thread diameters, D . The recommended full thread depth shall be $2D + 6$ mm to aid interchangeability of valves and to reduce the number of fixing cap screw (bolt) lengths. The recommended engagement of fixing cap screw (bolt) threads for ferrous mountings is $1,25D$.

^b The dimensions specifying the area within the dotted bold lines are the minimum dimensions for the mounting surface. The corners of the rectangle may be radiused to a maximum radius, r_{max} , equal to the thread diameter of the fixing cap screws (bolts). Along each axis the fixing holes are at equal distances to the mounting surface edges.

^c This dimension gives the minimum space required for a valve with this mounting surface. The dimension is also the minimum distance from centreline to centreline of two identical mounting surfaces placed on a manifold block. The attention of valve manufacturers is drawn to the fact that no part of the width of the complete valve assembly is to exceed this dimension.

^d T_1 -port is optional.

Figure 4 — Mounting surface for four-port hydraulic directional control valves with 11,2 mm maximum port diameter and without pilot port

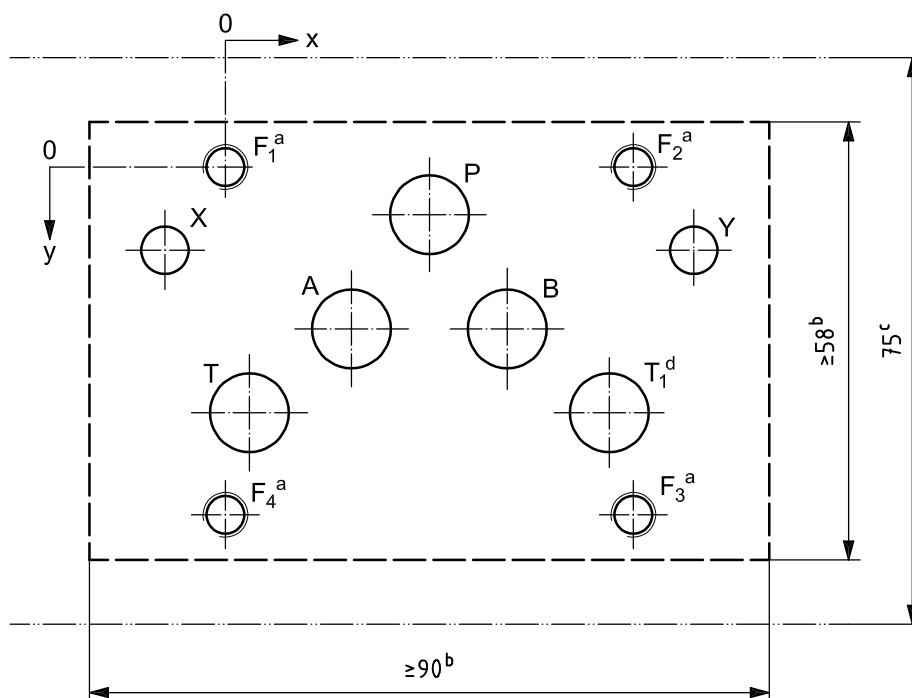
Table 4 — Mounting surface for four-port hydraulic directional control valves with 11,2 mm maximum port diameter and without pilot port

Dimensions in millimetres

Axis	P	A	T	T_1 (optional)	B	F_1	F_2	F_3	F_4
	Ø 11,2 max.	Ø 11,2 max.	Ø 11,2 max.	Ø 11,2 max.	Ø 11,2 max.	M6	M6	M6	M6
x	27	16,7	3,2	50,8	37,3	0	54	54	0
y	6,3	21,4	32,5	32,5	21,4	0	0	46	46
NOTE Operating pressure limitations and manifold blocks with these mounting surfaces are specified by the manufacturer.									

Codification: 4401-05-05-0-05

Dimensions in millimetres



^a The minimum thread depth is 1,5 cap screw (bolt) thread diameters, D . The recommended full thread depth shall be $2D + 6$ mm to aid interchangeability of valves and to reduce the number of fixing cap screw (bolt) lengths. The recommended engagement of fixing cap screw (bolt) threads for ferrous mountings is $1,25D$.

^b The dimensions specifying the area within the dotted bold lines are the minimum dimensions for the mounting surface. The corners of the rectangle may be radiused to a maximum radius, $r_{\max}$, equal to the thread diameter of the fixing cap screws (bolts). Along each axis the fixing holes are at equal distances to the mounting surface edges.

^c This dimension gives the minimum space required for a valve with this mounting surface. The dimension is also the minimum distance from centreline to centreline of two identical mounting surfaces placed on a manifold block. The attention of valve manufacturers is drawn to the fact that no part of the width of the complete valve assembly is to exceed this dimension.

^d T_1 -port is optional.

Figure 5 — Mounting surface for four-port hydraulic directional control valves with 11,2 mm maximum port diameter and with pilot ports

Table 5 — Mounting surface for four-port hydraulic directional control valves with 11,2 mm maximum port diameter and with pilot ports

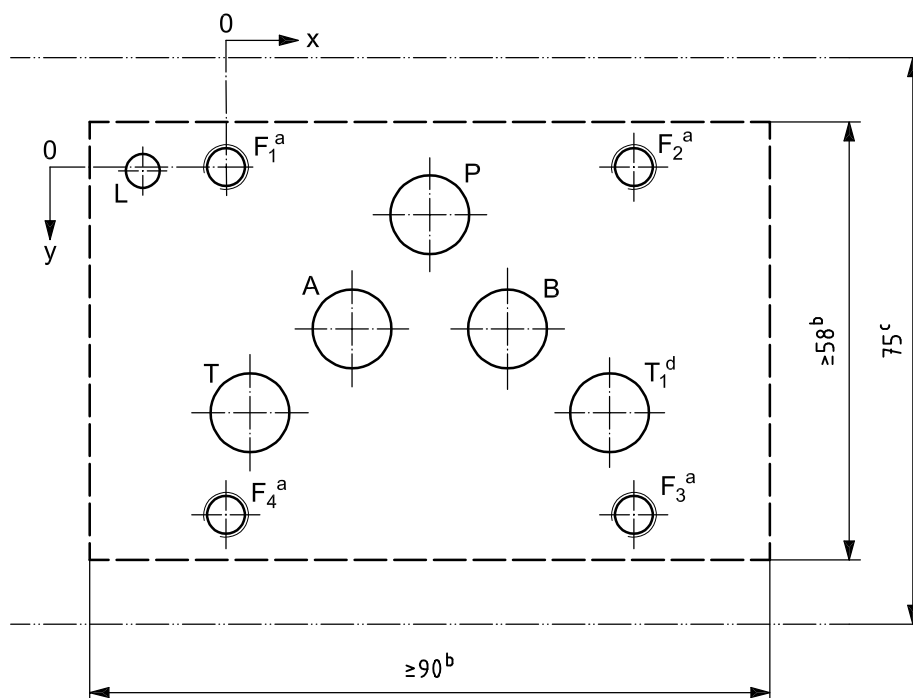
Dimensions in millimetres

Axis	P	A	T	T_1 (optional)	B	F_1	F_2	F_3	F_4	X	Y
	Ø 11,2 max.	Ø 11,2 max.	Ø 11,2 max.	Ø 11,2 max.	Ø 11,2 max.	M6	M6	M6	M6	Ø 6,3 max.	Ø 6,3 max.
x	27	16,7	3,2	50,8	37,3	0	54	54	0	- 8	62
y	6,3	21,4	32,5	32,5	21,4	0	0	46	46	11	11

NOTE Operating pressure limitations for subplates and manifold blocks with these mounting surfaces are specified by the manufacturer.

Codification: 4401-05-06-0-05

Dimensions in millimetres



^a The minimum thread depth is 1,5 cap screw (bolt) thread diameters, D . The recommended full thread depth shall be $2D + 6$ mm to aid interchangeability of valves and to reduce the number of fixing cap screw (bolt) lengths. The recommended engagement of fixing cap screw (bolt) threads for ferrous mountings is $1,25D$.

^b The dimensions specifying the area within the dotted bold lines are the minimum dimensions for the mounting surface. The corners of the rectangle may be radiused to a maximum radius, r_{max} , equal to the thread diameter of the fixing cap screws (bolts). Along each axis the fixing holes are at equal distances to the mounting surface edges.

^c This dimension gives the minimum space required for a valve with this mounting surface. The dimension is also the minimum distance from centreline to centreline of two identical mounting surfaces placed on a manifold block. The attention of valve manufacturers is drawn to the fact that no part of the width of the complete valve assembly is to exceed this dimension.

^d T_1 -port is optional.

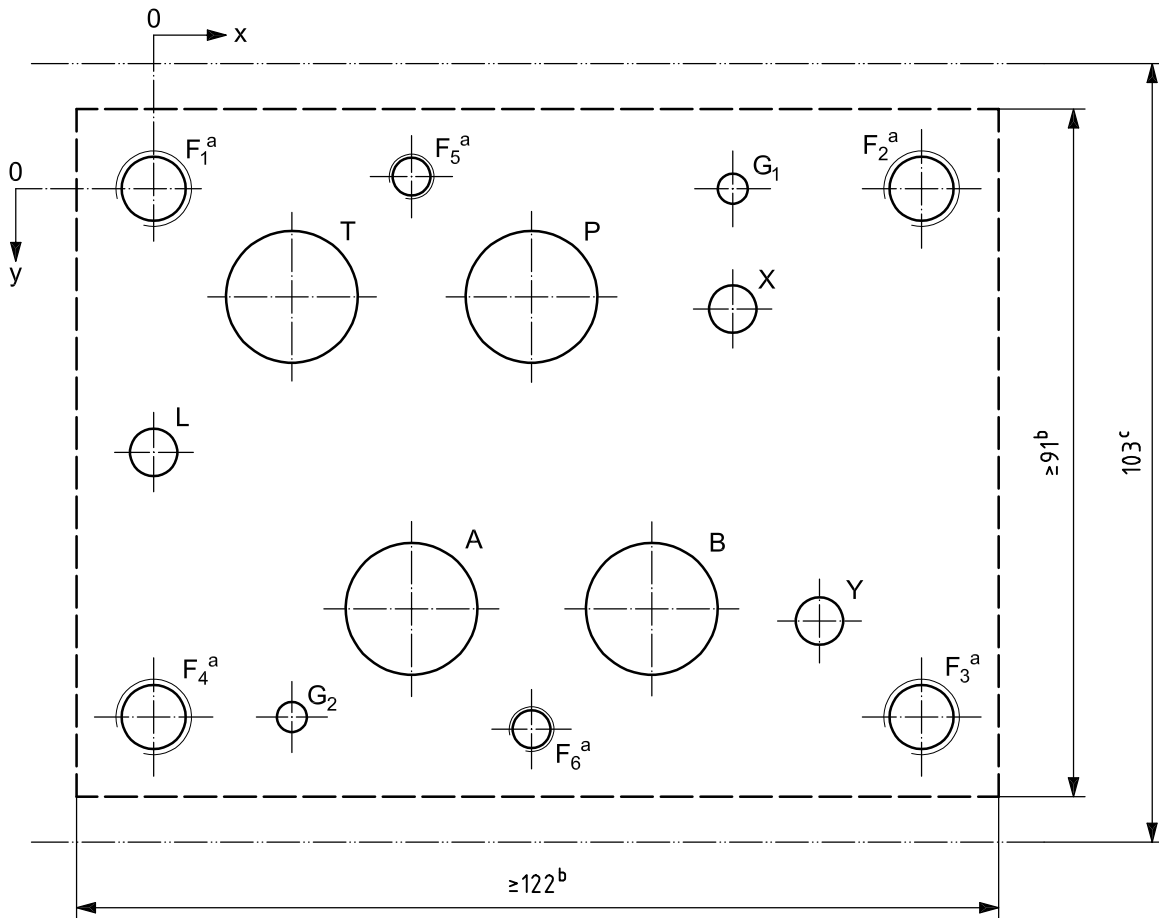
Figure 6 — Mounting surface for four-port hydraulic directional control valves with 11,2 mm maximum port diameter, with drain port and without pilot ports

Table 6 — Mounting surface for four-port hydraulic directional control valves with 11,2 mm maximum port diameter, with drain port and without pilot ports

Dimensions in millimetres

Axis	P	A	T	T_1 (optional)	B	F_1	F_2	F_3	F_4	L
	Ø 11,2 max.	Ø 11,2 max.	Ø 11,2 max.	Ø 11,2 max.	Ø 11,2 max.	M6	M6	M6	M6	Ø 4,5 max.
x	27	16,7	3,2	50,8	37,3	0	54	54	0	- 11
y	6,3	21,4	32,5	32,5	21,4	0	0	46	46	0,5

NOTE Operating pressure limitations for subplates and manifold blocks with these mounting surfaces are specified by the manufacturer.



^a The minimum thread depth is 1,5 cap screw (bolt) thread diameters, D . The recommended full thread depth shall be $2D + 6$ mm to aid interchangeability of valves and to reduce the number of fixing cap screw (bolt) lengths. The recommended engagement of fixing cap screw (bolt) threads for ferrous mountings is $1,25D$.

^b The dimensions specifying the area within the dotted bold lines are the minimum dimensions for the mounting surface. The corners of the rectangle may be radiused to a maximum radius, r_{max} , equal to the thread diameter of the fixing cap screws (bolts). Along each axis the fixing holes are at equal distances to the mounting surface edges.

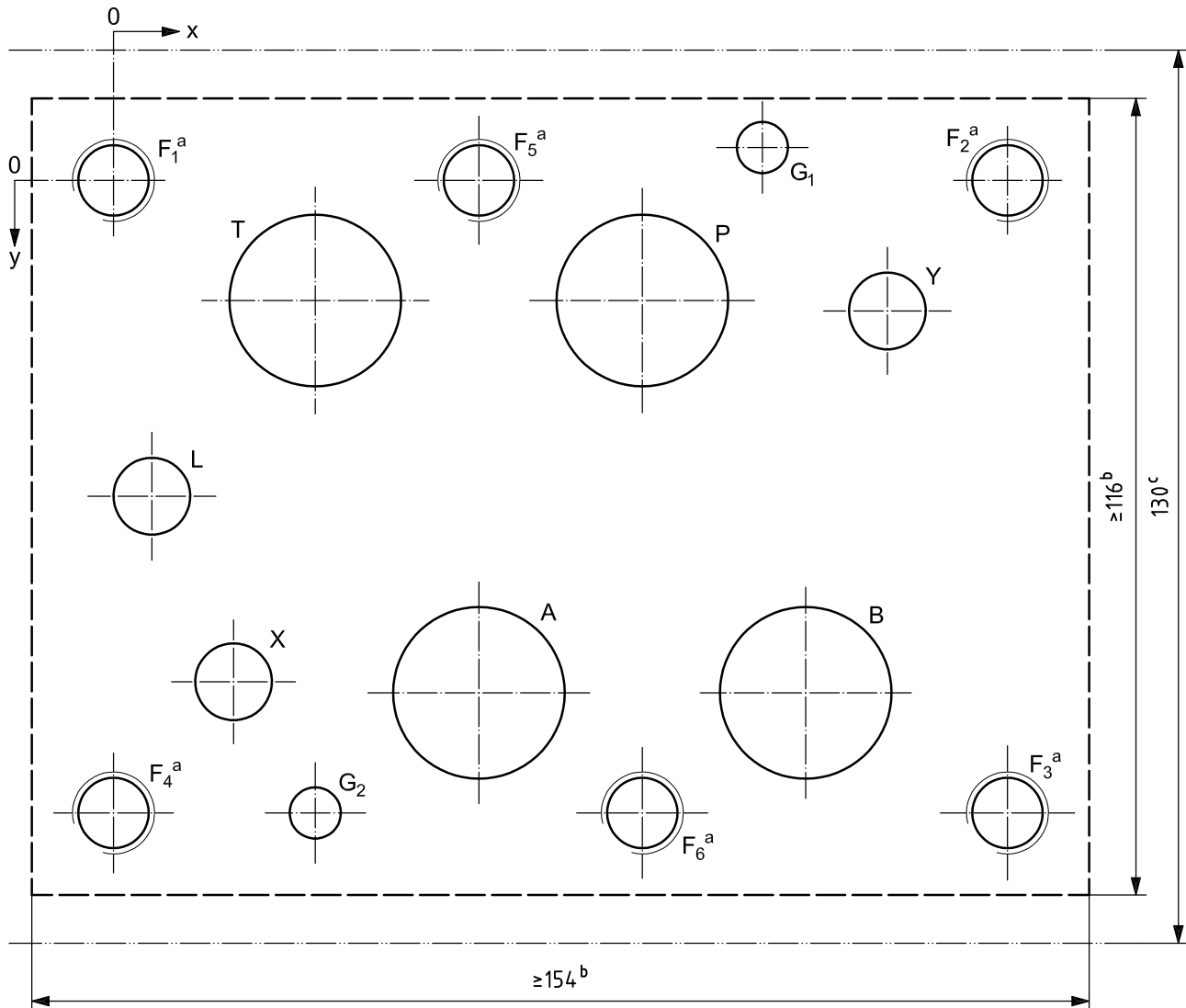
^c This dimension gives the minimum space required for a valve with this mounting surface. The dimension is also the minimum distance from centreline to centreline of two identical mounting surfaces placed on a manifold block. The attention of valve manufacturers is drawn to the fact that no part of the width of the complete valve assembly is to exceed this dimension.

Figure 7 — Mounting surface for four-port hydraulic directional control valves with pilot ports and with 17,5 mm maximum port diameter, with or without drain ports

Table 7 — Mounting surface for four-port hydraulic directional control valves with pilot ports and with 17,5 mm maximum port diameter, with or without drain ports

Dimensions in millimetres

Axis	P	A	T	B	L ^a	X	Y	G ₁ ^b	G ₂ ^b	F ₁	F ₂	F ₃	F ₄	F ₅	F ₆
	∅ 17,5 max.	∅ 17,5 max.	∅ 17,5 max.	∅ 17,5 max.	∅ 6,3 max.	∅ 6,3 max.	∅ 6,3 max.	∅ 4	∅ 4	M10	M10	M10	M10	M6	M6
x	50	34,1	18,3	65,9	0	76,6	88,1	76,6	18,3	0	101,6	101,6	0	34,1	50
y	14,3	55,6	14,3	55,6	34,9	15,9	57,2	0	69,9	0	0	69,9	69,9	– 1,6	71,5
NOTE Operating pressure limitations for subplates and manifold blocks with these mounting surfaces are specified by the manufacturer.															
^a Drain port is optional.															
^b Blind holes made in the mounting surfaces to accommodate the locating pins on the valves; their minimum depth is 8 mm.															



^a The minimum thread depth is 1,5 cap screw (bolt) thread diameters, D . The recommended full thread depth shall be $2D + 6$ mm to aid interchangeability of valves and to reduce the number of fixing cap screw (bolt) lengths. The recommended engagement of fixing cap screw (bolt) threads for ferrous mountings is $1,25D$.

^b The dimensions specifying the area within the dotted bold lines are the minimum dimensions for the mounting surface. The corners of the rectangle may be radiused to a maximum radius, r_{max} , equal to the thread diameter of the fixing cap screws (bolts). Along each axis the fixing holes are at equal distances to the mounting surface edges.

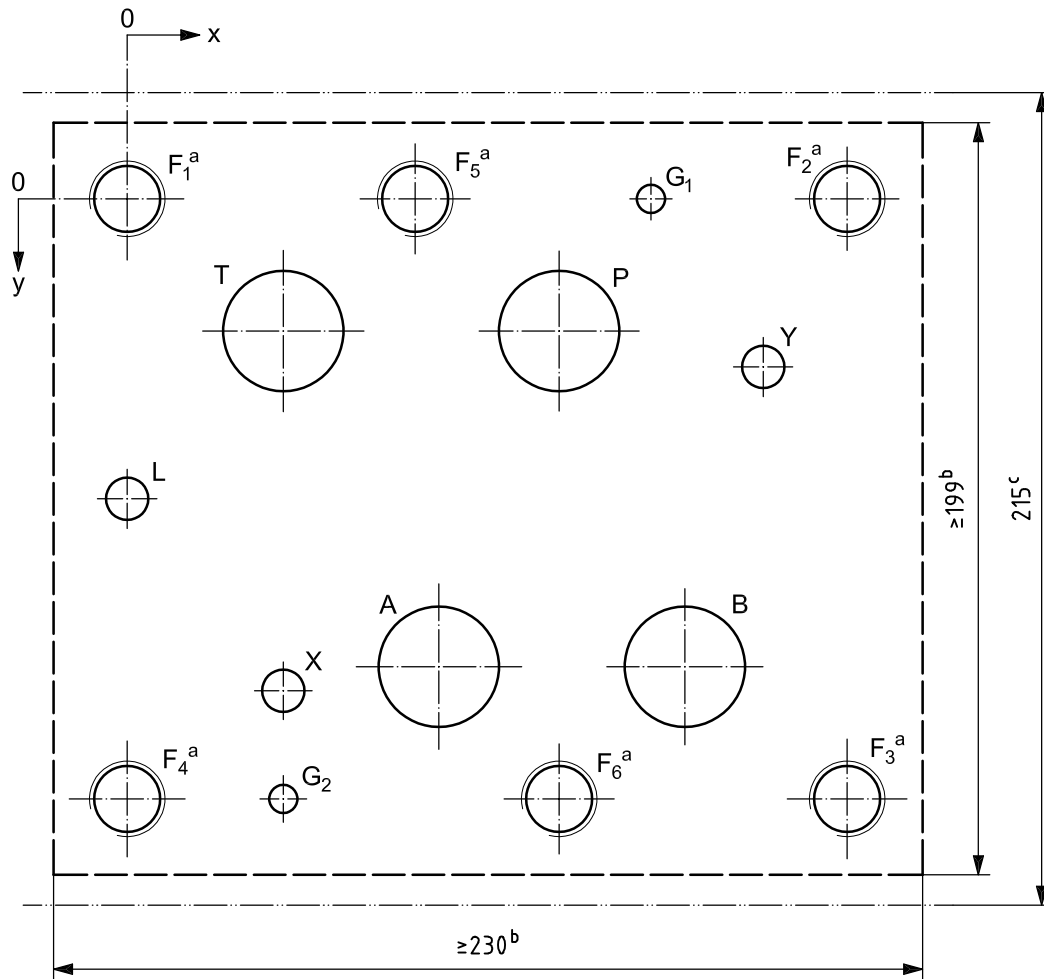
^c This dimension gives the minimum space required for a valve with this mounting surface. The dimension is also the minimum distance from centreline to centreline of two identical mounting surfaces placed on a manifold block. The attention of valve manufacturers is drawn to the fact that no part of the width of the complete valve assembly is to exceed this dimension.

Figure 8 — Mounting surface for four-port hydraulic directional control valves with pilot ports and with 25 mm maximum port diameter, with or without drain ports

Table 8 — Mounting surface for four-port hydraulic directional control valves with pilot ports and with 25 mm maximum port diameter, with or without drain ports

Dimensions in millimetres

Axis	P	A	T	B	L ^a	X	Y	G ₁ ^b	G ₂ ^b	F ₁	F ₂	F ₃	F ₄	F ₅	F ₆
	Ø 25 max.	Ø 25 max.	Ø 25 max.	Ø 25 max.	Ø 11,2 max.	Ø 11,2 max.	Ø 11,2 max.	Ø 7,5	Ø 7,5	M12	M12	M12	M12	M12	M12
x	77	53,2	29,4	100,8	5,6	17,5	112,7	94,5	29,4	0	130,2	130,2	0	53,2	77
y	17,5	74,6	17,5	74,6	46	73	19	– 4,8	92,1	0	0	92,1	92,1	0	92,1
NOTE 1 The use of this mounting will require caution relative to the port seals.															
NOTE 2 Operating pressure limitations for subplates and manifold blocks with these mounting surfaces are specified by the manufacturer.															
^a Drain port is optional.															
^b Blind holes made in the mounting surfaces to accommodate the locating pins on the valves; their minimum depth is 8 mm.															



^a The minimum thread depth is 1,5 cap screw (bolt) thread diameters, D . The recommended full thread depth shall be $2D + 6$ mm to aid interchangeability of valves and to reduce the number of fixing cap screw (bolt) lengths. The recommended engagement of fixing cap screw (bolt) threads for ferrous mountings is $1,25D$.

^b The dimensions specifying the area within the dotted bold lines are the minimum dimensions for the mounting surface. The corners of the rectangle may be radiused to a maximum radius, $r_{\max}$, equal to the thread diameter of the fixing cap screws (bolts). Along each axis the fixing holes are at equal distances to the mounting surface edges.

^c This dimension gives the minimum space required for a valve with this mounting surface. The dimension is also the minimum distance from centreline to centreline of two identical mounting surfaces placed on a manifold block. The attention of valve manufacturers is drawn to the fact that no part of the width of the complete valve assembly is to exceed this dimension.

Figure 9 — Mounting surface for four-port hydraulic directional control valves with pilot ports and with 32 mm maximum port diameter, with or without drain ports

Table 9 — Mounting surface for four-port hydraulic directional control valves with pilot ports and with 32 mm maximum port diameter, with or without drain ports

Dimensions in millimetres

Axis	P	A	T	B	L ^a	X	Y	G ₁ ^b	G ₂ ^b	F ₁	F ₂	F ₃	F ₄	F ₅	F ₆
	Ø 32 max.	Ø 32 max.	Ø 32 max.	Ø 32 max.	Ø 11,2 max.	Ø 11,2 max.	Ø 11,2 max.	Ø 7,5	Ø 7,5	M20	M20	M20	M20	M20	M20
x	114,3	82,5	41,3	147,6	0	41,3	168,3	138,6	41,3	0	190,5	190,5	0	76,2	114,3
y	35	123,8	35	123,8	79,4	130,2	44,5	0	158,8	0	0	158,8	158,8	0	158,8
NOTE Operating pressure limitations for subplates and manifold blocks with these mounting surfaces are specified by the manufacturer.															
^a Drain port is optional.															
^b Blind holes made in the mounting surfaces to accommodate the locating pins on the valves; their minimum depth is 8 mm.															

Bibliography

- [1] ISO 129, *Technical drawings — Dimensioning — General principles, definitions, methods of execution and special indications*
- [2] ISO 286-1, *ISO system of limits and fits — Part 1: Bases of tolerances, deviations and fits*
- [3] ISO 965-1, *ISO general-purpose metric screw threads — Tolerances — Part 1: Principles and basic data*

(Continued from second cover)

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Bureau of Indian Standards

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This Indian Standard has been developed from Doc No.: PGD 16 (1183).

Amendments Issued Since Publication

Amendment No.	Date of Issue	Text Affected

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